REMARKS

By this amendment, claims 1-3, 5, 7, 9, and 12-15 have been amended. Accordingly, claims 1-15 are currently pending in the application, of which claims 1 and 10 are independent claims.

Applicants respectfully submit that the above amendments do not add new matter to the application and are fully supported by the specification.

In view of the above amendments and the following Remarks, Applicants respectfully request reconsideration and timely withdrawal of the pending objections and rejections for the reasons discussed below.

Rejections Under 35 U.S.C. § 102

Claims 1-4 stand rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by U.S. Patent No. 6,436,221 issued to Chang, *et al.* ("Chang"). Applicants respectfully traverse this rejection for at least the following reasons.

In order for a rejection under 35 U.S.C. § 102(e) to be proper, a single reference must disclose every claimed feature. To be patentable, a claim need only recite a single novel feature that is not disclosed in the cited reference. Thus, the failure of a cited reference to disclose one or more claimed features renders the 35 U.S.C. § 102(e) rejection improper.

Claim 1, as currently amended, recites:

> "A method for fabricating a field emission display, comprising: depositing an emitter surface treatment agent on the substrate to cover the emitter after forming the emitter; hardening the emitter surface treatment agent; and removing the hardened emitter surface treatment agent from the substrate for exposing the carbon-based material contained in the emitter."

Chang fails to teach or suggest each and every claimed feature of claim 1, more particularly, Chang fails to teach or suggest the step of hardening the emitter surface treatment

agent. Rather, Chang teaches a method for fabricating a field emission display, comprising the steps of coating

> "a conductive pattern ... on a substrate by screen-printing a conductive slurry containing silver through a patterned screen ... Thereafter, a CNT layer is attached thereon by screen printing a CNT paste through a mesh pattern screen to form CNT image pixel array layer. The CNT paste consists of organic bonding agent, resin, silver powder, and carbon nano-tubes ... Finally, an adhesive film is closely attached on the cathode substrate and is then removed the adhesive film away ..." (See col. 2, lines 51-67).

The Examiner states, "that the adhesive film or the polymer film is sufficiently harden when deposited on top of the emitter" (See Office Action, on page 3). The Examiner's belief that the adhesive film may be sufficiently hard does not resolve the fact that Chang fails to teach or suggest the step of hardening the emitter surface treatment agent; thus, the Examiner's interpretation does not provide a reasoning to support the conclusion that Chang satisfies the statutory requirements of 35 U.S.C. §102(e). The Examiner fails to show that Chang teaches the step of hardening the emitter surface treatment agent. Accordingly, Chang fails to teach each and every claimed feature of claim 1. Claims 2-4 depend from independent claim 1, and therefore are patentable for at least the aforementioned reasons.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 102(e) rejection of claims 1-4. Since none of the other prior art of record discloses or suggests all the features of the claimed invention, Applicants respectfully submit that independent claim 1, and claims 2-4 that depend therefrom, are allowable.

Rejections Under 35 U.S.C. § 103

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the reference or references, when combined, must disclose or suggest all of the claim limitations. The

motivation to modify the prior art and the reasonable expectation of success must both be found in the prior art and not based upon a patent applicant's disclosure. *See in re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Chang, et. al. (U.S. Patent No. 6,436,2221) in view of Kurokawa, et. al. (U.S. Patent No. 6,645,402)

Claims 5, 6, 10, 11 and 15 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Chang in view of U. S. Patent No. 6,645,402 issued to Kurokawa, *et al.* ("Kurokawa"). Applicants respectfully traverse this rejection for at least the following reasons.

Dependent Claims 5 and 6

As noted above, Chang fails to teach or suggest each and every claimed feature of claim 1. Kurokawa fails to cure the deficiencies of Chang. Claims 5 and 6 depend from independent claim 1, and therefore are patentable for at least the reasons discussed above.

Independent Claim 10 and Dependent claims 11 and 15

Claim 10, as previously presented, recites:

> "A method for forming a carbon-based emitter, comprising: forming an emitter including a carbon-based material; forming a surface treatment agent over the emitter after forming the emitter; heating the surface treatment agent for forming a treatment film; and removing at least a portion of the treatment film."

The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

The examiner has failed to establish a prima facie case of obviousness. There is no suggestion or motivation to modify the references or to combine reference teachings, nor is there a showing of a reasonable expectation of success.

There is no suggestion or motivation to modify the teachings of Chang with the teachings of Kurokawa. Claim 10 recites the step of heating the surface treatment agent for forming a treatment film. As acknowledged by the Examiner, Chang fails to teach or suggest the step of heating the surface treatment agent for forming a treatment film (See Office Action, on page 5). Rather, Chang teaches application of an adhesive film and removal of the adhesive film. Chang teaches a method for fabricating a field emission display, comprising the steps of coating

> a conductive pattern ... on a substrate by screen-printing a conductive slurry containing silver through a patterned screen ... Thereafter, a CNT layer is attached thereon by screen printing a CNT paste through a mesh pattern screen to form CNT image pixel array layer. The CNT paste consists of organic bonding agent, resin, silver powder, and carbon nano-tubes ... Finally, an adhesive film is closely attached on the cathode substrate and is then removed the adhesive film away ..." (See col. 2, lines 51-67).

Kurokawa teaches a method for the formation of an electron emitting device, comprising the steps of

> forming a chromium electrode on a glass substrate by an RF sputtering technique; mixing graphite particles with a solution obtained by diluting isobutyl methacrylate with butyl carbitol; applying the resultant solution to the chromium electrode by a spinner; drying; and exposing the surface of the electrode to a hydrogen plasma to remove the organic material remaining on the surface of the graphite particles (See col. 8, line 49 to col. 9, line 1).

The Examiner indicates that it would have been obvious to have the heating process of Kurokawa for the surface treatment agent of Chang in order to realize a highly efficient electron emitting device by facilitating electron emission (See Office Action on pages 5 and 6). No reasoning or motivation is provided to substitute the heating process for applying the resultant solution obtained by diluting isobutyl methacrylate with butyl carbitol of Kurokawa for the

adhesive film of Chang to support the claimed feature of claim 10 of heating the surface treatment agent for forming a thin film. Kurokawa fails to disclose the step of heating a surface treatment agent for forming an adhesive film, e.g. the adhesive film of Chang, and Chang fails to disclose a motivation or suggestion to incorporate the heating process for applying the resultant solution of Kurokawa into the method steps of Chang for the formation of the adhesive film for the fabrication of the field emission display.

Assuming *arguendo* that a motivation exists to combine Chang and Kurokawa, there is no reasonable expectation of success when adding Kurokawa's heating process to apply the resultant solution to Chang's method for fabricating a field emission display. As noted above, Chang discloses the method of fabricating a field emission display by attaching an adhesive film on the cathode substrate and then removing the adhesive film away. Heat is not required to form the adhesive film. Hence, there is no reasonable expectation of success in substituting the heating process of Kurokawa for forming the adhesive film of Chang.

Claims 11 and 15 depend from independent claim 10, and therefore are patentable for at least the aforementioned reasons.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of claims 5, 6, 10, 11 and 15. Since none of the other prior art of record, whether taken alone or in any combination, discloses or suggests all the features of the claimed invention, Applicants respectfully submit that dependent claims 5 and 6, independent claim 10, and claims 11 and 15 that depend therefrom, are allowable.

Chang, et. al. (U.S. Patent No. 6,436,2221) in view of Howard, et. al. (U.S. Patent No. 6,623,720)

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Chang in view of U.S. Patent No. 6,645,402 issued to Howard, *et al.* ("Howard"). Applicants respectfully traverse this rejection for at least the following reasons.

As noted above, Chang fails to teach or suggest each and every claimed feature of claim 1. Applicants note that U.S. Patent No. 6,623,720 is issued to Thompson, *et. al.*, not Howard, *et. al.* as indicated by the Examiner in the Office Action (See Office Action, page 6, paragraph 6). Applicants believe the Examiner meant the citation to read, "U.S. Patent No. 5,848,925, issued to Howard, *et. al.*" Howard fails to cure the deficiencies of Chang. Claim 7 depends from independent claim 1, and therefore is patentable for at least the reasons discussed above.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of claim 7. Since none of the other prior art of record, whether taken alone or in any combination, discloses or suggests all the features of the claimed invention, Applicants respectfully submit that claim 7 is allowable.

Chang, et. al. (U.S. Patent No. 6,436,221)

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Chang. Applicants respectfully traverse this rejection for at least the following reasons.

As noted above, Chang fails to teach or suggest each and every claimed feature of claim 1. Claim 8 depends from independent claim 1, and therefore is patentable for at least the reasons discussed above.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of claim 8. Since none of the other prior art of record, whether taken alone or in any combination, discloses or suggests all the features of the claimed invention, Applicants respectfully submit that claim 8 is allowable.

Chang, et. al. (U.S. Patent No. 6,436,2221) in view of Kurokawa, et. al. (U.S. Patent No. 6,645,402) and further in view of Murata, et. al. (U.S. Patent No. 6,013,238)

Claims 9, 13 and 14 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Chang in view of Kurokawa, and further in view of Murata. Applicants respectfully traverse this rejection for at least the following reasons.

As noted above, Chang and Kurokawa fail to teach or suggest each and every claimed feature of claim 1. Murata fails to cure the deficiencies of Chang and Kurokawa. Claim 9 depends from independent claim 1, and therefore is patentable for at least the reasons discussed above.

As noted above, Chang and Kurokawa fail to teach or suggest each and every claimed feature of claim 10. Murata fails to cure the deficiencies of Chang and Kurokawa. Claims 13 and 14 depend from independent claim 10, and therefore are patentable for at least the reasons discussed above.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of claims 9, 13 and 14. Since none of the other prior art of record, whether taken alone or in any combination, discloses or suggests all the features of the claimed invention, Applicants respectfully submit that dependent claims 9, 13 and 14 are allowable.

Chang, et. al. (U.S. Patent No. 6,436,2221) in view of Kurokawa, et. al. (U.S. Patent No. 6,645,402) and further in view of Howard, et. al. (U.S. Patent No. 6,623,720)

Claim 12 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Chang in view of Kurokawa, and further in view of Howard. Applicants respectfully traverse this rejection for at least the following reasons.

As noted above, Chang fails to teach or suggest each and every claimed feature of claim 1. Applicants note that U.S. Patent No. 6,623,720 is issued to Thompson, *et. al.*, not Howard, *et. al.* as indicated by the Examiner in the Office Action (See Office Action, page 6, paragraph

6). Applicants believe the Examiner meant the citation to read, "U.S. Patent No. 5,848,925, issued to Howard, *et. al.*" Howard fails to cure the deficiencies of Chang and Kurokawa. Claim 12 depends from independent claim 10, and therefore is patentable for at least the reasons discussed above.

Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of claim 12. Since none of the other prior art of record, whether taken alone or in any combination, discloses or suggests all the features of the claimed invention, Applicants respectfully submit that claim 12 is allowable.

CONCLUSIONS

Applicants believe that a full and complete response has been made to the pending Office Action and respectfully submits that all of the stated objections and grounds for rejection have been overcome or rendered moot. Accordingly, Applicants respectfully submit that all pending claims are allowable and that the application is in condition for allowance.

Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact the Applicants' undersigned representative at the number below to expedite prosecution.

Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,

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